

IN THE CLAIMS

1. (currently amended) ~~A~~Ina system for protecting a structure against electrical discharges,

the structure comprising an outer skin (I) of composite having an exterior surface and opposite surface, an internal part (II) of either composite or metallic material having one side facing the outer skin and another side, and a row of metallic fasteners (III) each having a nut (T) fastening the outer skin (I) with the internal part (II), and

the system comprising a first metallic mesh (1) having a first side and an opposite side on substantially all of the exterior surface of the outer skin (I), a second metallic mesh (2) on at least part of the first side of the first metallic mesh (1), a washer (A) between the nut (T) and the other side of the internal part (II), and an organic finish (A.O.) that covers entirely the exterior surface, the improvements characterized in that:

- the first metallic mesh (1) is a thin metallic wire mesh laid up and cured simultaneously with the outer skin (I) of composite;
- the second metallic mesh (2) is a metallic wire mesh thicker than the thin metallic wire mesh that overlaps the first metallic mesh (1) a minimum of 50 mm from the row of the fasteners (III), and has been put by simultaneously with the curing of the outer skin (I) and subsequently drilled and countersunk for installation of the fastener (III); and
- metallic countersunk washers (3) in a subset of the row of the fasteners (III) so that there is at least one of the metallic countersunk washers (3) every 200 mm, each of the metallic countersunk washers (3) being installed at a gap existing between each of the fasteners (III) and a corresponding hole in the outer skin (I) and the internal part (II).

2. (previously presented) A system as in claim 1, characterized in that both the first and second metallic meshes (1 and 2) are made of bronze and the composite of the outer skin (I) consists essentially of carbon fibre material and epoxy matrix.

3. (currently amended) A system as in claim 1, characterized in that the washer (A) is made of isolating material when the internal part (II) is composite while the said washer (A) is metallic ~~and when~~ the internal part (II) is also metallic.

4. (currently amended) A system as in claim 1, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) ~~and when~~ the internal part is metallic.

5. (currently amended) A process for manufacturing the system ~~of a~~ in claim 14, comprising the following steps:
 - fabricating the outer skin (I) by laying-up carbon fibre material plies and subjecting the resulting lay-up to a cure cycle simultaneously with:
 - the bronze first metallic mesh (1) put onto the external surface of the outer skin (I) and covering the whole external surface,
 - the bronze second metallic mesh (2) ~~aligned put in line~~ with the fastener row and overlapping the bronze first metallic mesh not less than the 50 mm ~~onto~~ both sides of the row of ~~the~~ fasteners, and
 - the isolating ply (F.V.) put onto the opposite surface of the outer skin (I) a distance that avoids contact between the internal part (II) and the outer skin (I);

- fastening the internal part (II) ~~and as well as~~ drilling and countersinking the external surface of the outer skin (I);
- installing the metallic countersunk washer (3) and, subsequently, the fastener (III) with the washer (A) and nut (T); and
- applying the organic finish (A.O.).

6. (canceled)

7. (previously presented) A system as in claim 1, characterized in that both the first and second metallic meshes (1 and 2) are made of bronze and the composite of the outer skin (I) consists essentially of carbon fibre material and epoxy matrix.

8. (currently amended) A system as in claim 2, characterized in that the washer (A) is made of isolating material ~~and when~~ the internal part (II) is composite while ~~the~~ said washer (A) is metallic ~~and when~~ the internal part (II) is also metallic.

9. (currently amended) A system as in claim 1, characterized in that the washer (A) is made of isolating material ~~and when~~ the internal part (II) is composite while ~~the~~ said washer (A) is metallic ~~and when~~ the internal part (II) is also metallic.

10. (currently amended) A system as in claim 7, characterized in that the washer (A) is made of isolating material ~~and when~~ the internal part (II) is composite while ~~the~~ said washer (A) is metallic ~~and when~~ the internal part (II) is also metallic.

11. (currently amended) A system as in claim 2, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) and~~when~~ the internal part is metallic.

12. (currently amended) A system as in claim 3, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) and~~when~~ the internal part is metallic.

13. (canceled)

14. (currently amended) A system as in claim 7, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) and~~when~~ the internal part is metallic.

15. (currently amended) A system as in claim 8, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) and~~when~~ the internal part is metallic.

16. (currently amended) A system as in claim 9, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) and~~when~~ the internal part is metallic.

17. (currently amended) A system as in claim 10, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) and~~when~~ the internal part is metallic.

18. (currently amended) A system as in claim 11, characterized in that it also includes an isolating ply (F.V.) between the outer skin (I) and the internal part (II) ~~and when~~ the internal part is metallic.

19. (currently amended) ~~A p~~Process for manufacturing the system ~~of as in~~ claim 18, comprising the following steps:

- fabricating the outer skin (I) by laying-up carbon fibre material plies and subjecting the resulting lay-up to a cure cycle simultaneously with:
 - the bronze first metallic mesh (1) put onto the external surface of the outer skin (I) and covering the whole external surface,
 - the bronze second metallic mesh (2) ~~aligned put in line~~ with the fastener row and overlapping the bronze first metallic mesh not less than ~~the~~ 50 mm ~~onto~~ both sides of the row of ~~the~~ fasteners, and
 - the isolating ply (F.V.) put onto the opposite surface of the outer skin (I) covering the required a distance that avoids contact between the internal part (II) and the outer skin (I);
- fastening the internal part (II) ~~and as well as~~ drilling and countersinking the external surface of the outer skin (I);
- installing the metallic countersunk washer (3) and, subsequently, the fastener (III) with the washer (A) and nut (T); and
- applying the organic finish (A.O.).

20. (currently amended) ~~A~~^{In}a system for protecting a structure against electrical discharges,

the structure comprising an outer skin (I) of composite having an exterior surface and opposite surface, an internal part (II) of either composite or metallic material having one side facing the outer skin and another side, and a row of metallic fasteners (III) every 200 mm along the row respectively having nuts (T) on first ends for fastening the outer skin (I) with the internal part (II), and

the system comprising a first metallic mesh (1) having a first side and an opposite side on substantially all of the exterior surface of the outer skin (I), a second metallic mesh (2) on at least part of the first side of the first metallic mesh (1), a washer (A) between the nut (T) and the other side of the internal part (II), and an organic finish (A.O.) that covers entirely the first side, the exterior surface and a second end of the fastener (III) opposite the nut and at the second metallic mesh, the improvements characterized in that:

- the first metallic mesh (1) is a thin metallic wire mesh laid up and cured simultaneously with the outer skin (I) of composite;
- the second metallic mesh (2) is a metallic wire mesh thicker than the thin metallic wire mesh, overlaps the first metallic mesh (1) a minimum of 50 mm from opposite sides of the row of the fasteners (III), and has been put by simultaneously with the curing of the outer skin (I) and subsequently drilled and countersunk for installation of the row of the fasteners (III); and
- metallic countersunk washers (3) across a gap between the fasteners (III) of the row and the drilled and countersunk outer skin (I).